



OFFICE OF THE CITY AUDITOR COLORADO SPRINGS, COLORADO

Denny L. Nester, City Auditor
MBA CPA CIA CFE CGFM CGAP

18-22 Colorado Springs Utilities 2C Impacts

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Purpose

The purpose of this audit was to quantify the impact on Colorado Springs Utilities for work related to road improvements performed as a result of voter approved ballot issue 2C (2C).

Highlights

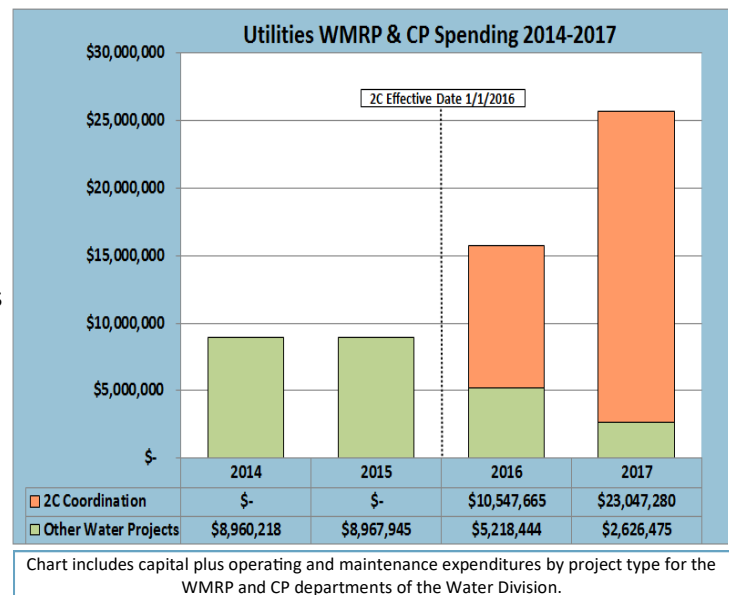
We conclude Colorado Springs Utilities (Utilities) response to the passage of ballot issue 2C primarily impacted the Water Division project prioritizations, resources, and spending. Given City of Colorado Springs (City) 2C enabled increase in street paving, Utilities was tasked with coordinating projects to address underground infrastructure ahead of paving operations to minimize cutting into newly paved roads.

During 2016 and 2017, \$33.6 million was spent by Utilities to address water main projects ahead of City 2C paving operations. Water Main Replacement Program (WMP) and Cathodic Protection (CP) operations were reprioritized and increased, which resulted in reduced spending on other water projects.

Ballot issue 2C, a municipal special tax measure that became effective January 1, 2016, is currently raising approximately \$50 million per year for City road repair and maintenance. Utilities changed their approach to water main replacement and cathodic protection of pipes to improve their subsurface infrastructure ahead of the planned 2C paving and concrete projects. Utilities and the City created an ongoing 2C coordination team to protect newly paved streets from subsequent Utilities related underground repairs. No 2C revenue is allowed to be spent by Utilities to address Utilities' work in the roadways.

Utilities derived several benefits from the investment related to addressing water infrastructure ahead of 2C paving:

- Process improvements in condition assessments resulted in targeted pipe replacement.
- Installation of 15.97 miles of pipe in advance of paving to protect the new pavement from future breaks.
- Completion of 43.86 miles of pipeline condition assessments improved Utilities' risk planning for the water system.



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- Standards and inspection processes were created to ensure contractor quality for work on valve and manhole covers affected by 2C paving.
- Installation of cathodic protection technology during condition assessment should increase the life span of pipelines.
- The improved processes and coordination resulting from 2C have been extended to non-2C projects to bring these best practices to other projects.

The Water Division total budget, of which WMRP and CP are only a component, increased \$8.6 million or 4.5% from 2014 to 2017 largely due to assessment of the distribution system and repair of critical infrastructure.

Water System Impacts

As seen in the chart on the previous page, spending for 2C projects forced a reprioritization of available funds in the Water Division and delayed previously planned projects. Of the \$33.6 million spent on 2C water projects, \$1.95 million was spent to replace pipes that were on both the WMRP list and under the 2C list of streets to be paved. Adjusting the water projects resulted in increasing the quantity of pipe replaced and improved the quality of pipe segments that may have not otherwise been repaired, thus reducing risk of pipe failure under the newly paved streets.

Utilities increased investments in preventative programs which included CP, contractor training, leak detection, development of new standards for valve and manhole covers, as well as new methods to improve coordination between the City of Colorado Springs and Utilities for infrastructure projects.

The City supported Utilities' efforts to respond to 2C by eliminating some fees for projects conducted as a result of 2C paving plans. Looking forward, the planned cost to continue Utilities' Water division activities ahead of 2C paving is \$18-\$20 million per year.

The auditors would like to thank staff from Colorado Springs Utilities Water division for their support during this audit.

Commendable Practice

Because of the need to rapidly address water line conditions prior to the City's 2C paving operations, new processes were developed and implemented by Utilities to determine the condition of pipes.

These condition assessments were conducted in concert with installation of CP in locations where beneficial to increasing the longevity of the pipe. Utilities' spending on the CP program increased from \$300K prior to 2C to over \$2.0 million per year as a direct result of the change in priority to review underground infrastructure prior to paving.

The new condition assessment processes supplemented Utilities' risk model for WMRP. By focusing the condition assessment processes on those pipes impacted by 2C, Utilities was able to determine if entire segments of pipe needed to be replaced or if they were still in good condition, thus more effectively utilizing funds.

We recognize the improvements made in the condition assessment processes as a commendable practice.

Water main breaks and paving

Prior to 2C, audit analysis of paving and water main break data showed a correlation between these activities. Water main breaks tended to follow paving activities, which suggested if no changes were made Utilities should prepare for an increase in the number of water main breaks due to the increased paving operations. Fortunately, this trend did not occur. While there have been some water main breaks in the vicinity of 2C paved roads, there were far fewer than had been predicted. Possible reasons for the low number of breaks include the efforts to replace fragile segments of pipe prior to paving as a result of the more robust condition assessment process mentioned earlier and training Utilities provided to 2C contractors on proper hydrant usage to prevent damaging water hammer.

This audit was conducted in conformance with the International Standards for the Professional Practice of Internal Auditing, a part of the Professional Practices Framework promulgated by the Institute of Internal Auditors.